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ABSTRACT

This study was an investigation of salary differentials among State University of New York librarians representing university centers, state colleges, agricultural and technical colleges, and special and medical schools. Of institutions with active membership in the State University of New York Librarians' Association (SUNYLA), 337 librarians in 1973 and 421 in 1974 responded to mailed questionnaires; those not responding were contacted by telephone. They supplied information on salary, rank--assistant, associate, or full librarian, sex, education, and years of professional experience. Statistical analyses showed significant differences between salaries of men and women, all else being equal. The average earnings of women were lower than those of men and mean income level of all respondents. Men were found to move through the ranks faster than women; however, no pattern of salary distribution was detected between men and women within each rank. Rank was found to be the strongest predictor of salary, other significant predictors being years of professional experience and sex. Additional variables noted to consider in further analyses of sex differentials in salary are length of time within a rank, administrative function, age, and mobility for job advancement. Detailed data analyses are included. Appended are results of a multivariate analysis by type of institution. (KP)

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A Study of Salary Determinants Within the SUNY Librarians' Association Between 1973 and 1974

by

Karlye Gill, B.K.L. Genova and Elliot Cole

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Karlye Gill, B.K.L. Genova and Elliot Cole*

A Study of Salary Determinants Within the SUNY Librarians' Association Between 1973 and 1974

Sponsored By The State University Of New York Librarians' Association

Personnel Policies Committee

Abstract

A detailed report on several factors determining librarians' salaries within the SUNY system. The study seeks to explain the existence of salary differentials among librarians of both sexes. Extensive data analysis is presented for the results of the overall survey, and comparisons are made between the various types of institutions included.

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Introduction

Past research on librarians' income has involved many comparisons with the salaries in other professions.[1] This study focuses on internal comparisons within the library profession, following a more recent trend toward self-examination in our field.[2] Some of the questions asked in the past have implied a concern over the relatively low salary level for librarianship in general. Yet little was done to organize what was known about the determinants of salary within the profession. Also, concern over discrimination against women has become a frequent issue in library related research. Salary and labor statistics are available, but in a form which makes comparisons and generalizations hard. Other study results are difficult to integrate due to differences in terminology, definitions and analytic choices. Schiller (1974) provides an excellent bibliographic essay attempting to organize the presently available survey information.[3]

There are at least three distinctive approaches taken by surveys in the past, with respect to the choice of some well-defined or manageable population for study. First, national surveys of a particular category of librarians, such as academic, or public library practitioners.[4] The second group restrict their scope even more; an example would be a survey of head librarians in academic libraries.[5] The third group circumvents the weightly business of conducting a national survey altogether; thus, such studies have a regional character and concentrate on state systems or even individual libraries as their target.[6] The scope of these three types of surveys notwithstanding, for the most part these studies share a preference for limited statistical analysis of the data.

The present study is of the third type, focusing on librarians within the

State University of New York system (SUNY). We believe this to be the first study on the issues of salary within SUNY, and have sought to trace some factors that might explain salary differentials among librarians of both sexes. We also present more detailed data analyses than earlier studies in the hope that this effort may serve as a positive example for future research of this kind.

Method

This project was initiated by the State University of New York Librarians' Association (SUNYLA), which has a nominal membership of seventy-two institutions. The survey dealt with twenty-nine institutions with active SUNYLA membership during the study period, in order to maximize the rate of response. Of these, twenty-three provided data on individual librarians in 1973; in 1974 we obtained cooperation from twenty-seven institutions (see Table 1). The types of institutions represented in the study are: university centers, state colleges, agricultural and technical colleges, medical schools and special schools. Our 1973 sample included 337 librarians, while in 1974 the number rose to 421 (see Tables 2 and 3). Directors of libraries were excluded from the study since cooperation from a significant number proved unlikely.

The need to contact institutions dispersed throughout the state of New York dictated data collection by mail, with telephone follow-up whenever necessary. The instrument we used was a fill-out scheme requesting standard information such as employees' sex, rank, pay, experience and education, but no names. We contacted the SUNYLA representative for each institution, with a cover letter explaining the nature of the project. Where no SUNYLA representative was available, the data collection form was sent to the office of the

Table 1. State units included in the study, by year.

	1973	1974
AGRICULTURAL AND TECHNICAL COLLEGES		
Cantion	x	x
COobleskill	x	x
Delhi	x	x
Farmingdale	x	x
Morrisville	x	x
STATE COLLEGES		
Brockport	x	x
Buffalo	x	x
Cortland	x	x
Fredonia		x
Geneseo	x	x
New Paltz	x	x
Old Westbury		x
Oneonta	x	x
Oswego	x	x
Plattsburgh	x	x
Potsdam	x	x
Purchase	x	x
Utica/Rome		
SPECIAL AND MEDICAL SCHOOLS		
Downstate Medical	x	x
Environmental Science and Forestry	x	x
Maritime	x	x
Optometry	x	x
Upstate Medical	x	x
UNIVERSITY CENTERS		
Albany	x	x
Binghamton	x	x
Buffalo		x
Stony Brook	x	x

Table 2. Respondents by type of institution (1973 subsample).

Institutions		Respondents	
Type	Number	Number	(Percent)
Special and Medical	5	33	9.8
State Colleges	10	161	47.8
University Centers	5	116	34.4
Ag & Tech Colleges	3	27	8.0
TOTAL	23	337	100.0

Table 3. Respondents by type of institution (1974 subsample).

Institutions		Respondents	
Type	Number	Number	(Percent)
Special and Medical	5	30	7.1
State Colleges	13	190	45.1
University Centers	5	177	42.0
Ag and Tech Colleges	4	24	5.7
TOTAL	27	421	100.0

Director. In a limited number of cases we had to follow-up by phone to secure a response. From the twenty-nine institutions contacted, we obtained data from twenty-three in 1973 and twenty-seven in 1974, or a response rate of 79% and 93% respectively. The data for both years were obtained as of December. SUNY had two contract settlements in effect during this period. Thus the time

interval used by our study enabled us to observe salary and rank changes within twelve months that would, without a new settlement, normally occur over a period of twenty-four months.

Results

The variables examined in this study were salary, rank, sex, education, years of professional experience of SUNYLA librarians, and type of institution.

Of all librarians in the study, 67% were women in 1973, and 66% in 1974, essentially the same for both years and institutions (see Table 4).[7]

Table 4. Proportion of women in sample each year.

	1973		1974	
Women	226	67.1%	278	66.0%
Men	111	32.9%	143	34.0%
TOTAL	337	100.0%	421	100.0%

Salary

For the purpose of this investigation, salaries were prorated where appropriate to a full-time twelve month period. The upper limits of the salary scale increased noticeably between 1973 and 1974. Thus, in 1973 the upper salary limit was $19,800. The inclusion of SUNY-Buffalo, the largest university center, in our 1974 sample may account in part for the extended salary scale for that year. However, even without SUNY-BUffalo the salary level would have risen by approximately $3,000 in 1974 (see Tables 5 and 6).

Table 5. Salary distribution in 1973, all institutions.

	Frequency	(Percent)
Below $11,000	157	46.6
$11,000-$13,000	84	24.9
$13,000-$15,000	60	17.8
$15,000-$20,000	36	10.7
TOTAL	N=337	100.0%

Table 6. Salary distribution in 1974, all institutions.

	Frequency	(Percent)
Below $11,000	93	22.1
$11,000-$13,000	127	30.2
$13,000-$15,000	95	22.6
$15,000-$20,000	97	23.0
$20,000 & over	9	2.1
Total	N=421	100.0%

Furthermore, we found statistically significant differences in the mean salary level by type of institution, with university centers in the lead for both years (see Tables 7 and 8).

Table 7. Average salary by type of institution, 1973 subsample.

Type of institution	Mean salary ($)	N
Overall	11798	(337)
Special and Medical	12063	(33)
State Colleges	11487	(161)
University Centers	12431	(116)
Ag & Tech Colleges	10602	(27)

$F = 6.15$ $p < .001$

Table 8. Average salary by type of institution, 1974 subsample.

Type of institution	Mean salary ($)	N
Overall	13359	(421)
Special and Medical	13389	(30)
State Colleges	12968	(190)
University Centers	13944	(177)
Ag & Tech Colleges	12097	(24)

$F = 5.25$ $p < .01$

Rank

There are three ranks for librarians within the SUNY system: assistant, associate and full librarian. In both 1973 and 1974, only five percent of the librarians studied held the rank of full librarian. That over fifty percent were on the assistant level makes the system bottom heavy for both years (see Tables 9 and 10).

Table 9. Distribution of librarians by rank, 1973, subsample.

	Frequency	(Percent)
Assistant Librarian	193	57.3
Associate Librarian	127	37.7
Full Librarian	17	5.0
TOTAL	N=337	100.0%

Table 10. Distribution of Librarians by rank, 1974, subsample.

	Frequency	(Percent)
Assistant Librarian	231	54.9
Associate Librarian	168	39.9
Full Librarian	22	5.2
TOTAL	N=421	100.0%

Education

The education variable was split into two dimensions: a) highest degree held and b) an earned librarian degree. The present study is insensitive to the achievements of librarians with non-degree work or courses to their credit. Somewhat surprisingly for academic libraries, about six percent had less than a masters degree and very few held a doctoral degree (see Table 11).[8] The vast majority of people held a library degree (Table 12).

Table 11. Distribution by highest degree held, both years.

	Less than B.A.	B.A.	One Masters	More Than One Masters	Ph.D.	Total
1973	10 (3.0%)	11 (3.3%)	241 (71.5%)	71 (21.0%)	4 (1.2%)	337 (100%)
1974	12 (2.8%)	13 (3.1%)	282 (67.0%)	104 (24.7%)	10 (2.4%)	421 (100%)

Table 12. Distribution of library degrees, both years.

	1973		1974	
Library degrees	300	89.0%	369	87.6%
Non-library degrees	37	11.0%	52	12.4%
Totals	337	100.0%	421	100.0%

Professional experience

Professional experience was defined as the total number of years of service as a "librarian". This intentionally broad definition implies that the data on experience would cover years spent working prior to receiving of a degree. In addition, experience in libraries other than academic was also included. Our rationale was that any previous experience in librarianship would be a bargaining point for salary level.

Our sample for both years does not reflect a long entrenched library staff. Approximately thirty percent of librarians had less than five years of experience, and an approximately equal percentage had between five and ten years of experience. Librarians who had either less than one year or over twenty years of experience are a marked minority (see Tables 13 and 14).

Table 13. Distribution of librarian experience, 1973 subsample.

	Frequency	(Percent)
Less than 1 year	22	6.5
1 to 5 years	115	34.1
5 to 10 years	101	30.0
10 to 20 years	70	20.8
20 years and above	29	8.6
TOTAL	337	100.0

Table 14. Distribution of librarian experience, 1974 subsample.

	Frequency	(Percent)
Less than 1 year	25	5.9
1 to 5 years	128	30.4
5 to 10 years	134	31.8
10 to 20 years	104	24.7
20 years and above	30	7.1
TOTAL	421	100.0

Women had consistently more experience than men -- overall and at each rank (see Table 15). On the other hand, the average length of experience for women at each rank decreased slightly between 1973 and 1974, but not enough to indicate a significant trend. On the whole then, it will appear tha men moved at a faster rate than women through the ranks, despite having less overall experience.

Table 15. Mean years of experience, by rank and sex.

1973	Mean Years of Experience	
Assistant Librarian, overall	4.8	(193)
Men	3.3	(53)
Women	5.3	(140)
Associate Librarian, overall	11.7	(127)
Men	9.9	(47)
Women	12.7	(80)
Full Librarian, overall	16.1	(17)
Men	15.8	(11)
Women	16.6	(8)
		N
	TOTAL	(337)
1974		
Assistant Librarian, overall	4.3	(231)
Men	3.7	(67)
Women	5.3	(164)
Associate Librarian, overall	12.0	(168)
Men	11.2	(61)
Women	12.5	(107)
Full Librarian, overall	14.1	(22)
Men	13.2	(15)
Women	16.2	(7)
		N
	TOTAL	(421)

Salary by sex

For both years there is over $1,000 difference in salaries between men and women, in favor of the men. No trend toward reducing the disparity is

visible in 1974 (see Tables 16 and 17). Indeed the 5% differential in 1973 becomes 7% in 1974 and the dollar amount in reases from $931 to $1,247. The differences become more complex as we examine the distribution of salaries by taking both sex and rank into account. In 1973 women fare slightly better than men within ranks, with the exception of the associate level. This trend is reversed in 1974, so that men fared better overall. It is evident that on the whole the average earnings of women are lower than the average earnings of men, as well as lower than the mean income level for all librarians studied.

Table 16. Average salaries for each librarian rank, by sex, 1973.

	Salary ($)	N
Men and Women, Overall Mean	11797	(337)
Men Overall Mean	12421	(111)
Assistant Librarian	10180	(53)
Associate Librarian	13841	(47)
Full Librarian	17154	(11)
Women Overall Mean	11490	(226)
Assistant Librarian	10244	(140)
Associate Librarian	13225	(80)
Full Librarian	17448	(6)

Table 17. Average salaries for each librarian rank, by sex, 1974.

	Salary ($)	N
Men and Women, Overall Mean	13358	(421)
Men Overall Mean	14181	(143)
Assistant Librarian	11412	(67)
Associate Librarian	15883	(61)
Full Librarian	19626	(15)
Women Overall Mean	12935	(278)
Assistant Librarian	11422	(164)
Associate Librarian	14861	(107)
Full Librarian	18926	(7)

Proportionately, there is a concentration of women at the lower salary levels for both years; thus in both years over twice as many women drew salaries under 13,000. In 1974 twice as many men as women were in the highest salary bracket of above $20,000 (Tables 18 and 19). A closer look at the high salary levels shows that in 1973 there were three men compared to one woman drawing the highest salary (between $19-19,800)(Table 20). In 1974 the salaries of the two highest paid women were between 21,000 and 22,000 while the highest salary for men was in the range of 26-27,000. As no women held Ph.D., this differential may be traced to education, rather sex.

Table 18. Salary distribution by sex, 1973.

Salary	Men	Women	Total
$8600 to $11000	42 (12.5%)	115 (34.1%)	157 (46.6)
$11000 to $13000	24 (7.1%)	60 (17.8%)	84 (24.9)
$13000 to $15000	27 (8.0%)	33 (9.8%)	60 (17.9)
$15000 to $19800	18 (5.3%)	18 (5.3%)	36 (10.6)
TOTAL	111 (32.9)	226 (67.1)	337 100.0

$p < .01$ by x^2

Table 19. Salary distribution by sex, 1974.

Salary	Men	Women	Total
$9000 to $11000	27 (6.4%)	66 (15.7%)	93 (22.1)
$11000 to $13000	35 (8.3%)	92 (21.9%)	127 (30.2)
$13000 to $15000	28 (6.7%)	67 (15.9%)	95 (22.6)
$15000 to $20000	47 (11.2%)	50 (11.9%)	97 (23.0)
$20000 to $26930	6 (1.4%)	3 (0.7%)	9 (2.1)
TOTAL	143 (34.0)	278 (66.0)	421 100.0

$p < .01$ by x^2

Table 20. Distribution of highest salaries, by sex, 1973-74.

1973	15,000-17,000	17,000-19,000	19,000-19,800	
Men	11	4	3	Fischer's exact test
Women	13	4	1	n.s.
1974	**20,000-22,000**	**22,000-24,000**	**24,000-27,000**	
Men	2	2	2	
Women	3	0	0	n.s.

Salaries of men and women within ranks

We further examined the salary distribution between men and women within each rank. With the exception of the full librarian level, a pattern favoring men did not emerge (see Tables 21-26).

Table 21. Salary by sex for assistant librarians, 1973.

Salary	Men	Women	Total
$8600 to $11000	42 (21.8%)	111 (57.5%)	153 (79.3)
$11000 to $13000	9 (4.7%)	27 (14.0%)	36 (18.7)
$13000 to $15000	2 (1.0%)	1 (0.5%)	3 (1.6)
$15000 to $19800	0 (0.0%)	1 (0.5%)	1 (0.5)
TOTAL	53 27.5	140 72.5	193 100.0

n.s. by x^2

Table 22. Salary by sex for assistant librarians, 1974.

Salary	Men	Women	Total
$9000 to $11000	27 (11.7%)	65 (28.1%)	92 (39.8)
$11000 to $13000	33 (14.3%)	75 (32.5%)	108 (46.8)
$13000 to $15000	6 (2.6%)	23 (10.0%)	29 (12.6)
$15000 to $20000	1 (0.4%)	1 (0.4%)	2 (0.9)
TOTAL	67 29.0	164 71.0	231 100.0

n.s. by x^2

Table 23. Salary by sex for associate librarians, 1973.

Salary	Men	Women	Total
$8600 to $11000	0 (0.0%)	4 (3.1%)	4 (3.1)
$11000 to $13000	15 (11.8%)	33 (26.0%)	48 (37.8)
$13000 to $15000	24 (18.9%)	32 (25.2%)	56 (44.1)
$15000 to $19800	8 (6.3%)	11 (8.7%)	19 (15.0)
TOTAL	47 37.0	80 63.0	127 100.0

n.s. by x^2

Table 24. Salary by sex for associate librarians, 1974.

Salary	Men	Women	Total
$9000 to $11000	0 (0.0%)	1 (0.6%)	1 (0.6)
$11000 to $13000	2 (1.2%)	17 (10.1%)	19 (11.3)
$13000 to $15000	22 (13.1%)	44 (26.2%)	66 (39.3)
$15000 to $20000	35 (20.8%)	44 (26.2%)	79 (47.0)
$20000 and above	2 (1.2%)	1 (0.6%)	3 (1.8)
TOTAL	61 36.3	107 63.7	168 100.0

$p < .05$ by x^2

Table 25. Salary by sex for full librarians, 1973.

Salary	Men	Women	Total
$13000 to $15000	1 (5.9%)	0 (0.0%)	1 (5.9)
$15000 to $20000	10 (58.8%)	6 (35.3%)	16 (94.1)
TOTAL	11 67.7	6 35.3	17 100.0

n.s. by Fischer's exact test

Table 26. Salary by sex for full librarians, 1974.

Salary	Men	Women	Total
$15000 to $20000	11 (50.0%)	5 (22.7%)	16 (72.7)
$20000 to $26930	4 (18.2%)	2 (9.1%)	6 (27.3)
TOTAL	15 68.2	7 31.8	22 100.0

n.s. by Fischer's exact test

Rank by sex

The next analysis was designed to examine the distribution of men and women by rank (see Tables 27 and 28).

Table 27. Distribution of rank by sex, 1973.

Rank	Men	Women	Total
Assistant Librn.	53 (15.7%)	140 (41.5%)	193 (57.3)
Associate Librn.	47 (13.9%)	80 (23.7%)	127 (37.7)
Full Librarian	11 (3.3%)	6 (1.8%)	17 (5.0)
TOTAL	111 32.9	226 67.1	337 100.0

$p < .01$ by x^2

Table 28. Distribution of rank by sex, 1974.

Rank	Men	Women	Total
Assistant Librn.	67 (15.9%)	164 (39.0%)	231 (54.9)
Associate Librn.	61 (14.5%)	107 (25.4%)	168 (39.9)
Full Librarian	15 (3.6%)	7 (1.7%)	22 (5.2)
TOTAL	143 34.0	278 66.0	421 100.0

$p < .01$ by x^2

If we examine the proportions within each sex (see Table 29), we find that 53 men represent 47.7% of the 111 men in the 1973 sample. By contrast, 140 women represent 61.9% of the 226 women in the sample, so that women seem to be overpresented on the lowest rank level. Similarly, on the associate level 47 men represent 42.3% of all men, while 80 women are 35.4% of all women. The contrast is most visible on the full librarian level, where men outnumber women three to one; that is, 11 men represent about 10% of all men in 1973, while the six women full librarians represent less than 3% of all women, so that men appear to be overpresented at the highest rank level. The same comparisons hold for 1974 (Table 29).

Table 29. Proportionate representation of men and women by rank.

1973	Men		Women	
	n	%	n	%
Asst.	53	47.7	140	61.9 *
Assoc.	47	42.3	80	35.4 *
Full	11	9.9	6	2.7 *
TOTAL	111	100%	226	100%
1974				
Asst.	67	46.8	164	59.0 *
Assoc.	61	42.7	107	38.5 *
Full	15	10.5	7	2.5 *
TOTAL	143	100%	278	100%

* $p < .05$ by x^2

Education by Sex

Next we turned to education, where men consistently displayed higher education levels than women librarians (see Tables 30 and 31).

Table 30. Highest education degree attained, by sex, 1973.

	Men	Women	Total
Less than B.A.	0 0.0	10 3.0	10 3.0
B.A.	1 0.3	10 3.0	11 3.3
1 Masters	68 20.2	173 51.3	241 71.5
More than 1 Masters	38 11.3	33 9.8	71 21.1
Ph.D.	4 1.2	0 0.0	4 1.2
TOTAL	111 32.9	226 67.1	337 100.0

$p < .001$ by X^2

Table 31. Highest education degree attained, by sex, 1974.

	Men	Women	Total
Less than B.A.	1 0.2	11 2.6	12 2.8
B.A.	2 0.5	11 2.6	14 3.1
1 Masters	76 18.1	206 48.9	282 67.0
More than 1 Masters	54 12.8	50 11.9	104 24.7
Ph.D.	10 2.4	0 0.0	10 2.4
TOTAL	143 34.0	278 66.0	421 100.0

$p < .001$ by X^2

The largest cluster for both men and women held one masters degree, and as one progressed through the education achievement levels, women fell behind, so that all doctoral degrees were held by men in this study. The differentiation between library and non-library degrees held shows that in 1973 more men held library degrees, but in 1974 this difference no longer existed (see Tables 32 and 33).

Table 32. Library degrees held, by sex, 1973.

	Men	Women	Total
No Library Degree	5 (4.5%)	32 (14.2%)	37 (11.0%)
Library Degree	106 (95.5%)	194 (85.8%)	300 (89.0%)
TOTAL	111	226	337 100.0

$p < .01$ by X^2

Table 33. Library degrees held, by sex, 1974.

	Men	Women	Total
No Library Degree	18 (12.6%)	34 (12.2%)	52 (12.4%)
Library Degree	125 (87.4%)	244 (87.8%)	369 (87.6%)
TOTAL	143	278	421 100.0

n.s. by X^2

Finally, the comparison in terms of average level of education for men and women, by rank, shows that men had consistently higher education at all levels (1-5, less than B.A.=1, Ph.D.=5); see Tables 34 and 35. So it will appear

that on the descriptive level education seems to work in favor of men, while women have the edge in terms of experience.

Table 34. Average level of education, by rank and sex, 1973.

Sex/Rank	Average Education Level	N
Overall Mean	3.14	(337)
Men	3.40	(111)
Assistant Librarian	3.37	(53)
Associate Librarian	3.34	(47)
Full Librarian	3.81	(11)
Women	3.00	(226)
Assistant Librarian	3.02	(140)
Associate Librarian	2.96	(80)
Full Librarian	3.16	(6)

Table 35. Average level of education, by rank and sex, 1974.

Sex/Rank	Average Education Level	N
Overall Mean	3.14	(421)
Men	3.48	(143)
Assistant Librarian	3.50	(67)
Associate Librarian	3.32	(61)
Full Librarian	4.00	(15)
Women	3.05	(278)
Assistant Librarian	2.97	(164)
Associate Librarian	3.15	(107)
Full Librarian	3.42	(7)

On the whole, the descriptive data presented above do show differentials in salary, but some inconsistencies in these results call for further analysis before these differentials could be attributed to sex or any other factor(s).

Analsysis by type of institution

The different types of institutions within the SUNY system have various education functions, and make different demands on professional staffs; we have seen from Tables 7 and 8 that there are also statistically significant differences in salary. These differences bear some inspection as they relate to the variables of our focus: distribution by sex, years of professional experience, education, and rank.

Sex

In the population as a whole for both years, about one-third of librarians are male and two-thirds are female. Broken down by each institution type, there is little difference among the institutions, and these differences are not statistically significant (see Table 36). For both years, though, there is a slightly greater proportion of male librarians in University Centers libraries and slightly fewer in Agricultural and Technical Colleges.

Years of Professional Experience

For this predictor also, there is some difference in length of professional experience, but it is not statistically significant (see Table 37). The institutions which account for over 82% of librarians in 1973 and 87% of librarians in 1974 have only slight differences in average experience. In 1973 the average for State College librarians was 8.1 years and for University Center librarians was 7.7 years. The 1974 average increased slightly but unevenly to 8.5 years for State College librarians and 7.8 for Uni[illegible]ty Center librarians.

Librarians in the Special and Medical environment tend to have the greatest number of years in the field, with an average of 9.7 years for the 1973 subsample and 10.8 years for the 1974 subsample. Library professionals in

Table 36. Distribution of sex by institution.

1973:

	Men	Women	Total
Special and Medical	10 3.0	23 6.8	33 9.8%
State Colleges	49 14.5	112 33.2	161 47.8%
University Centers	44 13.1	72 21.4	116 34.4%
Ag & Tech Colleges	8 2.4	19 5.6	27 8.0%
TOTAL	111 32.9	226 67.1	337 100.0%

n.s. by X^2

1974:

	Men	Women	Total
Special and Medical	10 2.4	20 4.7	30 7.1%
State Colleges	59 14.0	131 31.1	190 45.1%
University Centers	67 15.9	110 26.1	177 42.0%
Ag & Tech Colleges	7 1.7	17 4.0	24 5.7%
TOTAL	143 34.0	278 66.0	421 100.0%

n.s. by X^2

Table 37. Years of professional experience by institution.

1973

	Mean	N
Special and Medical	9.7	(33)
State Colleges	8.1	(161)
University Centers	7.7	(116)
Ag & Tech Colleges	6.3	(27)
TOTAL	8.0	(337)

F = n.s.

1974

	Mean	N
Special and Medical	10.8	(30)
State Colleges	8.5	(190)
University Centers	7.8	(177)
Ag & Tech Colleges	6.7	(24)
TOTAL	8.3	(421)

F = n.s.

Agricultural and Technical Colleges have the lowest average years of experience, with 6.3 in the 1973 subsample, rising to 6.7 in the 1974 subsample.

Education by institution

Next we turn to levels of education of librarians in these institutions. Again education has two dimensions: highest degree attained (Table 38), and an earned library degree (Table 39). There is no statistically significant difference for either of these educational variables in the different institutional settings. On a descriptive basis though, we can take note that for the 1973 subsample about 70% of librarians have one master's degree, with the exception of Special and Medical librarians where the rate is 80%. These librarians have the lowest rate of 2 master's degrees -- 6% -- while Agricultural and Technical College librarians have the highest with 27%; the average of all librarians is 21%.

In the 1974 subsample, there is a slightly stronger tendency for librarians to have two masters degrees, the average being 25%. There has also been a statistically non-significant shift in the institutional distribution so that it is the University Center librarians who have the highest rate of second master's with 29%. Again Special and Medical librarians have the highest rate of single master's (87%) and the lowest rate of dual master's (7%).

Table 38. Highest degree by type of institution.

1973

	No BA	BA	1 MA	More Than 1 MA	Ph.D.	Total
Special and Medical	3 0.9	1 0.3	27 8.0	2 0.6	0 0.0	33 9.8%
State Colleges	6 1.8	6 1.8	113 33.6	35 10.4	1 0.3	161 47.8%
University Centers	0 0.0	4 1.2	82 24.4	27 8.0	3 0.9	116 34.4%
Ag & Tech Colleges	2 0.2	0 0.0	19 5.6	7 2.2	0 0.0	27 8.0%
TOTAL	10 2.9	11 3.3	241 71.5	71 21.1	4 2.2	337 100.0%

n.s. by X^2

1974

	No BA	BA	1 MA	More Than 1 MA	Ph.D.	Total
Special and Medical	1 0.2	1 0.2	26 6.2	2 0.5	0 0.0	30 7.1%
State Colleges	5 1.2	6 1.4	129 30.9	47 11.2	3 0.7	190 45.1%
University Centers	2 0.5	6 1.4	111 26.6	52 12.3	6 1.4	177 42.2%
Ag & Tech Colleges	1 0.2	1 0.2	16 3.8	5 1.2	1 0.2	24 5.6%
TOTAL	9 2.1	14 3.3	282 67.0	106 25.2	10 2.4	421 100.0%

n.s. by X^2

Table 39. Earned library degrees by type of institution.

1973

	No Library Degree	Library Degree	Total
Special and Medical	5 1.5	28 8.3	33 9.8%
State Colleges	22 6.5	139 41.2	161 47.8%
University Centers	8 2.4	108 32.0	116 34.4%
Ag & Tech Colleges	2 0.6	25 7.4	27 8.0%
TOTAL	37 11.0	300 89.0	337 100.0%

n.s. by X^2

1974

	No Library Degree	Library Degree	Total
Special and Medical	2 0.5	28 6.7	30 7.1 %
State Colleges	20 4.8	170 40.4	190 45.1%
University Centers	27 6.4	150 35.6	177 42.0%
Ag & Tech Colleges	3 0.7	21 5.0	24 5.7%
TOTAL	52 12.4	369 87.6	421 100.0%

n.s. by X^2

Rank by institution

The different functions of each institution within the SUNY system may be reflected by different proportions within the ranks for each institution. There are in fact statistically significant differences in rank for both 1973 and 1974 subsamples (see Table 40). For example, there were no Full Librarians in Agricultural and Technical Colleges for either subsample. University Centers, however, had a disproportionately larger share of the Full Librarians, having 10% in 1973 and 9% in 1974, with the subsample averages of 5.0 and 5.2 respectively. It should be noted that the two Full Librarians in the Special and Medical libraries in the 1973 subsample were not present in 1974. Perhaps these people left or retired from the system, and their positions were kept unfilled.

The majority of librarians are at the Assistant Librarian level across the 1973 and 1974 subsamples. However, this is not true across institutions and there is a considerable range. In the 1973 subsample, 57% of all librarians are at the assistant rank, with a range of 48% for University Centers to 67% for Agricultural and Technical Colleges. In the 1974 subsample, 55% of librarians are at the assistant rank, with a low of 47% in University Centers and a high of 63% in two types of institutions: the Special and Medical libraries and the Agricultural and Technical Colleges.

Table 40. Rank by type of institution.

1973

	Assistant Librarian	Associate Librarian	Full Librarian	Total
Special and Medical	19 5.6	12 3.6	2 0.6	33 9.8%
State Colleges	100 29.7	58 17.2	3 0.9	161 47.8%
University Centers	56 16.6	48 14.2	12 3.6	116 34.4%
Ag & Tech Colleges	18 5.3	9 2.7	0 0.0	27 8.0%
TOTAL	193 57.3	127 37.7	17 5.0	337 100.0%

$p < .05$ by X^2

1974

	Assistant Librarian	Associate Librarian	Full Librarian	Total
Special and Medical	19 4.5	11 2.6	0 0.0	30 7.1%
State Colleges	113 26.8	71 16.9	6 1.4	190 45.1%
University Centers	84 20.0	77 18.3	16 3.8	177 42.0%
Ag & Tech Colleges	15 3.6	9 2.1	0 0.0	24 5.7%
TOTAL	231 54.9	168 39.9	22 5.2	421 100.0%

$p < .05$ by X^2

Predictors and determinants of librarian salary

In this section we examine the results of a multivariate analysis on the effect of a number of variables when they are acting together on salary. This analysis has 3 stages: a) to describe the predictor variables of the individual's salaries in the overall 1973 and 1974 subsamples, b) to see how these variables can be extrapolated beyond the individuals in this study, e.g. to all librarians in the SUNY system, and c) to describe predictor variables as they emerge for each type of institution. The first and the third stage are descriptive while the second state is inferential. The statistical approach we take is stepwise regression, which has characteristics appropriate in a study such as this.

Overall relationships between variables

The associations between the pairs of variables in this study can be seen in the correlation matrices for the 1973 and 1974 subsamples (see Tables 41 and 42). We will first inspect all of the relationships for salary and sex, and comment breifly on the variables.

Table 41 shows that in the 1973 subsample, two variables are very strongly related to salary. The correlation between rank and salary is .82. The relationship between years of experience and salary is also very strong with a correlation of .63. Salary is weakly related to sex, with a negative correlation of -.18. This means that salaries for women tend to be slightly lower than salaries for men, as we have seen in Tables 16 through 26 above. The relationship between salary and a library degree is also negative and weak, with a correlation of -.15. It should be remembered that almost 90% of the people in the study held a library degree. Finally, salary is not associated with

Table 41. Correlation matrix for 1973.

Rank	---					
Salary	0.82	---				
Experience	0.54	0.63	---			
Sex	-0.17	-0.18	0.06	---		
Highest Degree	0.07	0.04	-0.22	-0.29	---	
Library Degree	-0.05	-0.15	-0.39	-0.15	0.43	---
	Rank	Salary	Experience	Sex	Highest Degree	Library Degree

highest degree of edcuation where the correlation is .04.

Next we look at the relationship of sex with the other variables. The strongest association is with the highest educational degree, where the correlation is -.29. This means that the men in this 1973 subsample have a slightly higher educational attainment than the women. There is also a weak and negative relationship between rank and sex, with a correlation of -.17. This means that relative to men, women tend to hold a greater proportion of lower library ranks. There is also a weak and negative correlation of -.15 between women and an earned library degree.

Rank is very strongly related to salary (r = .82) and experience (r = .54), barely associated with sex (r = -.17) and unrelated to either measure of education.

Highest degree is moderately related to sex (r = -.29) and to experience (r = -.22). A library degree is inversely related to years of experience (r = -.39) which means that those few people who do not have library degrees are more apt to have a lot of professional experience, rather than being relatively recent entrants to the profession.

For the 1974 subsample, the pattern remains, but highest degree's association with rank (.18) and sex (-.32) has increased.

Table 42. Correlation matrix for 1974.

Rank	---					
Salary	0.80	---				
Experience	0.51	0.58	---			
Sex	-0.16	-0.20	0.02	---		
Highest Degree	0.18	0.13	-0.18	-0.32	---	
Library Degree	-0.07	-0.11	-0.34	0.01	0.25	---
	Rank	Salary	Experience	Sex	Highest Degree	Library Degree

Overall salary predictions

Having looked at the bivariate relationship between salary and the predictor variables, how do these variables acting in a system effect or explain difference in salary? The regression table for all variables in 1973 and 1974 are presented in Tables 43 and 43a respectively. Both of these regression equations are extremely strong predictors of salary. The variance explained for the 1973 data is 73% and for 1974 it is 69%.

Rank was by far the strongest single variable associated with salary,

having dominant influence for both the 1973 and 1974 subsamples. The other statistically significant predictors are years of professional experience and sex. Neither of the education variables is statistically significant.

Table 43. Regression table for 1973 subsample, salary.

Multiple R	0.86
R Square	0.73
Standard Error	1258.

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	5.	1435739341.23229	287147868.24646	181.4
Residual	330.	522488082.76474	1583297.22050	

Variables in the Equation

Variable	B	Beta	Std Error B	F
Rank	2667.	0.65	146.	334.47
Library Degree	-306.	-0.04	264.	1.35
Experience	96.	0.27	13.	51.4[illegible]
Sex	-404.	-0.08	155.	6.75
Highest Degree	175.	0.04	130.	1.83
(Constant)	7086.			

Table 43a. Regression table for 1974 subsample, salary.
(Same institutions as 1973)

Multiple R	0.85
R Square	0.72
Standard Error	1477.

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	5.	1904740622.01785	380948124.40357	174.5
Residual	342.	746496420.97928	2182638.07304	

Variables in the Equation

Variable	B	Beta	Std Error B	F
Rank	2864.	0.62	167.	294.51
Library Degree	205.	0.02	303.	0.46
Experience	124.	0.32	15.	72.24
Sex	-617.	-0.10	181.	11.61
Highest Degree	87.	0.02	143.	0.38
(Constant)	7906.			

Table 44. Regression table for 1974 full sample, salary.
(All institutions)

Multiple R	0.83
R Square	0.69
Standard Error	1609.

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	5.	2394007021.79251	478801404.35850	184.9
Residual	410.	1061589573.20590	2589242.86148	

Variables in the Equation

Variable	B	Beta	Std Error B	F
Rank	3134.	0.65	164.	364.1
Library Degree	175.	0.02	275.	0.40
Experience	106.	0.26	14.	54.5
Sex	-604.	-0.10	178.	11.6
Highest Degree	131.	0.03	142.	0.85
(Constant)	7590.			

It seemed anomalous that rank would be so much superior to experience as a predictor of salary. The question arose, was this an artifact of the statistical procedure, or was there some underlying process which singled out rank?

To answer this question, we looked at the determinants of rank. Our data have provided us with three ways of approaching this. First, we can take a cross-section - one year's data - and see the predictors of rank in 1973. Second, we can examine the data from those same institutions a year later and see if there appear to be any changes in the determinants of rank. Or we can look at all of the 1974 data -- with the four additional institutions reporting -- to see if both another year and additional institutions make a difference. We tried to predict rank by regressing it against experience (EXP), sex (SEX), highest degree (DEG), and library degree (LD), (see Tables 45, 46 and 47).

Table 45. Regression table for predicting rank, 1973.

Multiple R	0.61
R Square	0.37
Standard Error	0.47

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	4.	43.38439	10.84610	48.2
Residual	331.	74.46978	0.22598	

Variables in the Equation

Variable	B	Beta	Std Error B	F
Experience	0.05	0.63	0.00	171.7
Sex	-0.20	-0.16	0.06	11.7
Highest Degree	0.11	0.11	0.05	5.47
Library Degree	0.22	0.12	0.10	5.025
(Constant)	0.63			

Table 46. Regression table for predicting rank, 1974.
(Same institutions as in 1973)

Multiple R	0.60
R Square	0.36
Standard Error	0.48

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	4.	44.62493	11.15623	48.8
Residual	343.	78.36357	0.22847	

Variables in the Equation

Variable	B	Beta	Std Error B	F
Library Degree	0.19	0.10	0.10	3.9
Experience	0.05	0.60	0.00	168.4
Sex	-0.13	-0.10	0.06	4.6
Highest Degree	0.20	0.22	0.04	20.2
(Constant)	0.34			

Table 47. Regression table for predicting rank, 1974.
(All institutions)

Multiple R	0.59
R Square	0.35
Standard Error	0.48330

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	4.	51.97892	12.99473	55.63
Residual	411.	95.99944	0.23358	

Variables in the Equation

Variable	B	Beta	Std Error B	F
Experience	0.05	0.57	0.00	181.5
Highest Degree	0.23	0.24	0.04	31.1
Sex	-0.12	-0.10	0.05	5.34
Library Degree	0.08	0.04	0.08	0.94
(Constant)	0.39			

The regression equations are presented in Table 48, in their standardized form.

Table 48. Predicting rank

1973 subsample:

Rank = .62 EXP - .16 SEX + .11 DEG + .11 LD

R^2 = .37 N = 337

1974 subsample (same institutions as 1973):

Rank = .61 EXP - .10 SEX + .21 DEG + .11 LD

R^2 = .36 N = 349

1974 sample (all institutions):

Rank = .56 EXP - .11 SEX + .23 DEG

R^2 = .35 N = 418

Not all variables are in the above prediction equations, which contain only those with statistically significant relationships above the .05 level. Each of

these equations has about the same predictive power, with R^2 of .37, .36, and .35. These are moderate predictors of rank. Thus, while we are able to identify about a third of the basis of rank, principally in terms of years of experience, two-thirds are attributable to factors outside the set of objective variables available in this study. Experience is the most powerful predictor of rank, with a beta weight (standardized coefficient) of about .60, ranging between .57 and .63. We are not surprised to see some weak relationship between highest degree and rank. However, the presence of a library degree as a predictor is surprising since about 90 percent of the individuals in the sample have a library degree, making it virtually a constant. Perhaps an individual can become a librarian without such a degree, but it is a requisite for the senior positions. Finally, the negative sign of the beta weight for sex indicates that there is a statistically significant, yet negative relationship between being a woman and rank. Accordingly, all things being equal (experience and education), women are less likely to achieve a higher library rank than are men.

Because of the centrality of rank, and the strength of the factors outside of, and unknown to our study, we decided to proceed by inquiring into the predictors of salary within each rank. Prediction was strongest and most clear for Assistant Librarian, but could not be made for Full Librarian in two out of three comparisons. Predictions for Associate Librarian were weak.

Assistant Librarian

The variables in our study became more important as determinants of Assistant Librarian salaries during 1974 than in 1973, even when controlling for the composition of the two annual samples in terms of participating institutions (see Tables 49, 50, and 51).

Table 49. Regression table for assistant librarian salary, 1973 subsample.

Multiple R	0.53293
R Square	0.28402
Standard Error	1042.55532

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	4.	80628230.39808	20157057.59952	18.5
Residual	187.	203254337.34671	1086921.59009	

Variables in the Equation

Variable	B	Beta	Std Error B	F
Library Degree	76.	0.02	313.	0.06
Experience	141.	0.66	17.	65.92
Sex	-128.	-0.05	175.	0.54
Highest Degree	244.	0.12	147.	2.76
(Constant)	8806.			

Table 50. Regression table for assistant librarian salary, 1974. (Same institutions as 1973)

Multiple R	0.64
R Square	0.41
Standard Error	1108.48

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	4.	158202157.26219	39550530.31555	32.18806
Residual	189.	232230590.86153	1228733.28498	

Variables in the Equation

Variable	B	Beta	Std Error B	F
Library Degree	436.	0.08	325.	1.8
Experience	204.	0.67	18.	122.62
Sex	-274.	-0.09	190.	2.08
Highest Degree	146.	0.06	147.	0.9
(Constant)	9976.			

Table 51. Regression table, 1974 full sample.

Multiple R	0.64
R Square	0.41
Standard Error	1073.

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	4.	176290560.11592	44072640.02898	38.3
Residual	222.	255731359.05589	1151943.05881	

Variables in the Equation

Variable	B	Beta	Std Error B	F
Library Degree	430.	0.09	285.	2.27
Experience	200.	0.68	17.	146.4
Sex	-237.	-0.08	168.	1.98
Highest Degree	146.	0.07	133.	1.20
(Constant)	9766.			

The predictive power of the variables in 1973, R^2 = .26, is moderate. By contrast, in 1974 for all of the institutions, the predictive power was higher with R^2 = .41, and for those institutions participating during both years, R^2 = .40.

Table 52. Regression equations for describing assistant librarian salary.

1973 sample

predicted salary 129 EXP = 9606
(16)*

R^2 = .26 N = 193

1974 subsample (same as 1973)

predicted salary = 200 EXP + 587 LD + 9915
(18) (300)

R^2 = .40 N = 195

1974 full sample

predicted salary = 194 EXP + 486 LD + 10043
(16) (244)

R^2 = .40 N = 231

*number in parentheses is the standard error of the regression coefficient

For the 1973 equation there is only variable, experience, which is a statistically significant determinant of salary (Table 52). The regression coefficient for EXP is 129, and the constant is 9606. These numbers have the following interpretation: the 'base' salary is $9606; someone with one unit less experience (in this case a year) will tend to earn $129 per year less, and conversely, someone with an additional year's experience will find that year worth $129. However, since only 26% of the "reason" for this is explained, three-quarters of the determinants of 1973 salary lie outside the variables under consideration in this study. For this reason, an Assistant Librarian's actual salary may be higher or lower than our obtained 'prediction'. FOr 1974 the predictive power of the model is substantially better, and an additional explanatory variable has entered, the library degree. Each year's experience is worth about $200; the value of the library degree differs, depending on whether the same institutions as in 1973 are considered ($587) or all those reporting in 1974 ($486). Again, the importance of the library degree is curious, since so many people have one. It is all the more so because this can be considered a background variable, one that is relatively stable from year to year.

These regression coefficients from our samples can be used as estimators of the 'population' figures. Since we are dealing with a sample, we must take into consideration sampling error. The numbers in parentheses under the regression coefficient indicate the standard error of the regression co-efficient. For significance at the .05 level, we require 1.96 standard

errors. For example, in Table 55, in the 1974 full sample, the regression coefficient for experience is \$194 ± 16 x (1.96), which equals \$194 ± 31, or a range between \$163 and \$225. Likewise, for the library degrees. With a regression coefficient of \$486 and a standard error of \$244, the 95 percent confidence interval is between \$8 and \$964. Thus the confidence intervals for the variables in the Assistant Librarian equations are presented in Table 53.

Table 53. Regression equations for extrapolating assistant librarian salary beyond the study sample.

From 1973 sample =
predicted salary (98 to 160) EXP + 0606

From 1974 subsample =
predicted salary = (165 to 235) EXP + (1 to 1174) LD + 9915

From 1974 full sample =
predicted salary = (163 to 225) EXP + (8 to 964) LD + 10043

Associate Librarians

The predictive power of the regression equations for Associate Librarians are weak and apparently factors outside our consideration are the underlying determinants of the Associate Librarian's income (see Tables 54, 55, and 56). Years of experience again are statistically significant, but their impact is less here compared to Assistant Librarians. Another strong statistically significant variable here is sex.

Table 54. Regression table for associate librarian salary, 1973 subsample.

Multiple R	0.50
R Square	0.25
Standard Error	1368.

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	4.	75775447.92867	18943851.98217	10.1186
Residual	122.	228406202.79574	1872181.99013	

Variables in the Equation

Variable	B	Beta	Std Error B	F
Library Degree	763.	-0.16	499.	2.34
Experience	95.	0.42	21.	19.8
Sex	-822.	-0.26	266.	9.57
Highest Degree	401.	0.15	261.	2.37
(Constant)	12283.			

Table 55. Regression table for associate librarian salary, 1974 subsample. (Same institutions as 1973)

Multiple R	0.41
R Square	0.17
Standard Error	1749.

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	4.	82586533.97672	20646633.49418	6.75
Residual	131.	400904509.83946	3060339.76977	

Variables in the Equation

Variable	B	Beta	Std Error B	F
Library Degree	579.	0.09	609.	0.91
Experience	89.	0.36	23.	14.3
Sex	-1105.	-0.28	325.	11.6
Highest Degree	-227.	-0.07	302.	0.57
(Constant)	14950.			

Table 56. Regression table for associate librarian salary, 1974 full sample.

Multiple R	0.34
R Square	0.12
Standard Error	1910.

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	4.	78665760.99352	19666440.24838	5.39
Residual	162.	591126785.49750	3648930.77468	

Variables in the Equation

Variable	B	Beta	Std Error B	F
Library Degree	518.	0.09	489.	1.12
Experience	75.	0.28	23.	10.9
Sex	-1053.	-0.25	314.	11.2
Highest Degree	28.	0.01	279	0.01
(Constant)	14436.			

Sex has a negative coefficient -- ranging from $901 for the 1973 sample to $1113 for the full 1974 sample (Table 57). So women receive much lower income, on the associate level, all other things being equal. The descriptive regression equation applying to the people participating in this study are presented in Table 57. The inferential equations giving the 95% confidence interval is presented in Table 58.

Table 57. Regression equations describing associate librarian salary within the sample.

1973 sample =

predicted salary = \$102 EXP - \$901 SEX + \$12827
(18)* (258)

R^2 = .23 N = 127

1974 subsample (same as 1973) =

predicted salary = \$84 EXP - \$1060 SEX + \$14764
(20) (316)

R^2 = .16 N = 135

1974 full sample =

predicted salary = \$70 EXP - \$1113 SEX + \$14817
(18) (258)

R^2 = .12 N = 172

* standard error

Table 58. Regression equations for extrapolating associate librarian salary beyond the sample.

From 1973 sample =

predicted salary = (67 to 137) EXP - (395 to 1407) SEX + \$12827

From 1974 subsample =

predicted salary = (45 to 123) EXP - (440 to 1679) SEX + \$14764

From 1974 full sample =

predicted salary = (35 to 105) EXP - (607 to 1619) SEX + \$14817

Full Librarian

There were very few full librarians in the sample, and the variables in our study have no predictive power for full librarians in those institutions which participated in both the 1973 and 1974 studies (see Tables 59 and 60).

Only when the new institutions are added to the 1974 subsample do we find a statistically significant though moderate prediction of $R^2 = .21$. But this regression equation is based on only 17 people and should be therefore discounted (see Table 62). It is interesting that the significant variable is number of degrees, and that it is negative! A higher number of degrees is associated with lower salary! This finding does not jibe with our conception and experience with a learned profession within a learned environment. Perhaps those who have recently become full librarians have more degrees than their colleagues who have held the rank longer and hence may be a higher step in the pay scale.

Table 59. Regression table for full librarian salary, 1973 subsample.

Multiple R	0.61
R Square	0.37
Standard Error	1490.

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	4.	15691911.40300	3922977.85075	1.77
Residual	12.	26650890.71465	2220907.55955	

Variables in the Equation

Variable	B	Beta	Std Error B	F
Library Degree	-556.	-0.13	976.	0.33
Experience	-79.	-0.37	50.	2.52
Sex	-350.	-0.11	816.	0.18
Highest Degree	-1097.	-0.59	478.	5.26
(Constant)	23056.			

Table 60. Regression table for full librarian salary, 1974 subsample. (Same institutions as in 1973)

Multiple R	0.42
R Square	0.18
Standard Error	1998.

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	4.	11423038.21536	2855759.55384	0.72
Residual	13.	51877035.56242	3990541.19711	

Variables in the Equation

Variable	B	Beta	Std Error B	F
Library Degree	-1349.	-0.37	1739.	1.13
Experience	100.	0.27	97.	1.06
Sex	-4.	-0.00	1118.	0.00
Highest Degree	-172.	-0.07	883.	0.04
(Constant)	19735.			

Table 61. Regression table for full librarian salary, 1974 full sample. (All institutions)

Multiple R	0.26
R Square	0.07
Standard Error	2682.

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	4.	8542952.75141	2135738.18785	0.30
Residual	17.	122269064.56677	7192297.91569	

Variables in the Equation

Variable	B	Beta	Std Error B	F
Library Degree	-988.	-0.16	1952.	0.26
Experience	1.	0.00	114.	0.00
Sex	-234.	-0.05	1388.	0.03
Highest Degree	356.	0.10	1079.	0.11
(Constant)	18907.			

THe equations describing full librarian salary are presented in Table 62 below.

Table 62. Regression equations describing full librarian salary.

1973 sample =
variables have no predictive power

1974 subsample =
variables have no predictive power

1974 full sample =
predicted salary = - 865 DEG + $20363

R^2 = .21 N = 17

In summary, this statistical analysis found that years of experience are a significant predictor of salary for Associate Librarians and even more so for Assistant Librarians. Increased education did not add significantly to salary or rank advances.[9]

We have also found statistically significant (and economically as well) differences in the salaries of men versus women, all else being equal.[10] While this is not proof positive of discrimination in salary on the basis of sex, it would require the presentation and analysis of additional evidence to demonstrate that a factor other than sex is the underlying cause of the disparity. It is highly unlikely that the factor is experience, because overall experience and the average number of years of experience in each rank is higher for women than men. Thus we cannot argue that the 'recent arrival' of women underlies the difference. Available variables made only one weak predictions in the 1974 sample for Full Librarians; the sample size and emerging variable (education) suggest that this is a statistical anomaly. Obviously

other factors such as length of time within a rank, administrative functions, age, and number of times a librarian moved to improved professionally would have been useful. Certainly the last variable indicating mobility for job advancement would be helpful in further analyses. Also, Hobson (1974) found that in New Mexico salary raises were based on cost of living and merit.

APPENDIX

Multivariate analysis by type of institution

In this section we will look at the predictors of salary for each institution, to see if the difference in salary can be explained by different processes at play. The plan was to develop regression equations first within each type of institution, and secondly, within each rank of the institutional type. Small sample sizes have interfered with our ability to properly develop regression equations for each rank within the Agricultural and Technical Colleges and within the Special and Medical Libraries. For similar reasons, the data for associate and full librarian have been combined for State Colleges and University Centers.

University Centers

The prediction equations for salary of all librarians in University Centers is very strong, with an R^2 ranging from .69 to .77 (see Table 63). Only two of the predictor variables are statistically significant, rank and years of professional experience.

When we shift to predictors of salary within ranks, however, the picture changes. Neither equation for rank is as strong as the one for the overall institutional type, above. For assistant librarians the R^2 drops to a still moderately strong $R^2 = .41$ (see Table 64). Accompying this drop is a shift in

Table 63. University centers.

1973:

$$\hat{y} = 2809\ \text{RANK} + 93\ \text{EXP} + 7157$$
$$(230) \qquad (23)$$

$R^2 = .77 \qquad N = 117$

1974 subsample:

$$\hat{y} = 3134\ \text{RANK} + 98\ \text{EXP} + 8054$$
$$(236) \qquad (23)$$

$R^2 = .76 \qquad N = 129$

1974 all institutions:

$$\hat{y} = 3624\ \text{RANK} + 57\ \text{EXP} + 7619$$
$$(239) \qquad (22)$$

$R^2 = .69 \qquad N = 175$

the predictors, so that years of professional experience and earned library degree are statistically significant; of course, rank is no longer a variable. There are ample theoretical reasons to expect both of these variables to be good and valid predictors of librarian's salary.

When we shift our attention the combined Full and Associate Librarian group the R^2 drops to a very weak .14. While only objective factors were statistically significant for Assistant Librarians in the University Centers, sex is statistically significant for the senior librarians. Other contributing factors are years of professional experience and highest degree earned. The

negative coefficient for sex indicates a substantial disparity between men and women. The coefficient for highest degree earned is positive, and therefore those with more degrees tend to be higher paid. It should be pointed out that with such a low R^2, the largest part of the variance is attributable to factors outside the objective variables used in the present study.

Table 64. University centers.

Assistant:

$$\hat{y} = \underset{(29)}{215\ EXP} + \underset{(370.2)}{626\ LD} = 10087$$

$B_{EXP} = .67$ $B_{LD} = .15$

$R^2 = .41$ SE = 952 N = 88

Associate:

NR for sex, experience, library degree, highest degree

N = 77

Full:

NR for sex, experience, library degree, highest degree

N = 17

Full & Associate combined:

$$\hat{y} = \underset{(37)}{83\ EXP} - \underset{(518)}{1284\ SEX} + \underset{(351)}{739\ HID} + 13621$$

$R^2 = .14$ SE = 2535 N = 99

$B_{EXP} = .22$ $B_{SEX} = -.24$ $B_{HID} = .21$

State Colleges

The explanatory power of the regression equation for salary across all State College librarians is very strong, ranging from an R^2 of .70 for the 1973 subsample to R^2 = .73 for both of the 1974 subsamples (see Table 65). For the 1973 subsample, rank, years of professional experience and highest degree are statistically significant. For the 1974 subsamples, rank and professional experience are joined by sex as significant predictors. Again the data show that women receive the shorter end of the pay check. Again it is unclear whether the degree variable in 1973 stands as a proxy for sex.

When we look to predictors of salary within the ranks, the predictive power decreases (Table 66). For assistant librarians, the R^2 drops to a strong .48, explaining almost half of the variance. Only one variable, years of experience, is statistically significant. Looking at predictors of the senior librarians' salary, two variables predict 28% of the variance, still a respectable level. The two predictors are years of professional experience and sex. The negative regression coefficient for sex indicates that there may be a $2000 disparity in salary between men and women.

Table 65. State Colleges.

1973:

$$\hat{y} = \underset{(240)}{2647}\ \text{RANK} + \underset{(20)}{111}\ \text{EXP} + \underset{(165)}{352}\ \text{DEG} + 5793$$

R^2 = .70 N - 162

1974 subsample (same as 1973):

$$\hat{y} = \underset{(257)}{2843}\ \text{RANK} + \underset{(21)}{149}\ \text{EXP} - \underset{(256)}{951}\ \text{SEX} + 8247$$

R^2 = .73 N = 169

1974:

$$\hat{y} = \underset{(243)}{2817}\ \text{RANK} + \underset{(20)}{154}\ \text{EXP} - \underset{(235)}{997}\ \text{SEX} + 8287$$

R^2 = .73 N = 191

Table 66. State colleges.

Assistant:

$$\hat{y} = 218\ EXP + 10094$$
$$(21.5)$$

$R^2 = .48$ SE = 1060 N = 114

$B_{EXP} = .69$

Associate:

$$\hat{y} = 132\ EXP + 1332\ LD - 1931\ SEX + 13532$$
$$(36.9) \quad (735.2) \quad (434.5)$$

$R^2 = .29$ SE = 1707 N = 72

$B_{EXP} = .43$ $B_{LD} = .21$ $B_{SEX} = .47$

Full:

N = 6

Associate and Full:

$$\hat{y} = 145\ EXP - 2065\ SEX + 14897$$
$$(36.3) \quad (484.4)$$

$R^2 = .28$ SE = 2019 N = 78

Agricultural and Technical Colleges

Again, the predictive equations for salary across all librarians is extremely high, with an R^2 of .86 in the 1973 subsample and .75 in the 1974 subsample (see Table 70). Three variables are statistically significant: rank, years of professional experience, and sex. Sex is a negative predictor, meaning that all else held equal, women's salary tend to be lower than men's. The sample size would not support an analysis within the ranks.

Table 67. Agricultural and technical colleges.

1973:

$$\overset{n}{y} = 1458\ \underset{(277)}{RANK} + 218\ \underset{(30)}{EXP} - 803\ \underset{(265)}{SEX} + 7837$$

$R^2 = .86$ N = 27

1974:

$$\overset{n}{y} = 1520\ \underset{(473)}{RANK} + 188\ \underset{(49)}{EXP} - 989\ \underset{(499)}{SEX} + 9570$$

$R^2 = .75$ N = 23

Special and Medical Libraries

The results for Special and Medical libraries closely resembles those of University Centers. The explanatory power of the equations again is very high, .71 in the 1973 subsample and .58 in the 1974 subsample (see Table 68). The statistically significant predictors are the same as in the University Centers: rank and years of professional experience.

Table 68. Special and medical.

1973:

$$\overset{n}{y} = 2467\ \underset{(372)}{RANK} + 59\ \underset{(25)}{EXP} + 7823$$

$R^2 = .71$ N = 34

1974:

$$\overset{n}{y} = 1895\ \underset{(586)}{RANK} + 87\ \underset{(27)}{EXP} + 9860$$

$R^2 = .58$ N = 31

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1. For example, Munn counseled against recruiting men in the profession because of the low salaries. Ralph Munn, "It is a Mistake to Recruit Men," Library Journal, 74, November 1949, pp. 1639-40. Library Journal printed tables of median salaries of academic librarians and assorted academic officers because the information was "interesting." Cameron and Heim compared academic librarian salaries with teaching faculty, Library Journal, 79, March 1974, p. 414. Also, see: Donald Cameron and Peggy Heim, Librarians in Higher Education: Their Compensation Structures for the Academic Year 1972-1973, Third Survey. Washington: Council on Library Resources, Inc., 1974. pp. 309.

2. For example, see Rex C. Hopson, A Study of Academic Librarian's Salaries and Privileges. Albuquerque, New Mexico: University of New Mexico, University Library, 1974.

3. Anita Schiller, "Women in Librarianship," in: M. J. Voigt (ed.), Advances in Librarianship. New York: Academic Press, 1974. Vol. 4. pp. 101-147.

4. For example, Anita Schiller, Characteristics of Professional Personnel in College and University Libraries. Urbana, Illinois: University of Illinois, Library Research Center, 1968. ED 020766.

5. For example, Mary L. Bundy and Paul Wasserman, The Academic Library Administrator and His Situation. College Park, Maryland: University of Maryland, School of Information Services, 1970. ED 054 796.

6. Examples include: V. F. Massman, "Academic Library Salaries in a Seven State Area," College and Research Libraries, November 1969:477-483; and A Report on the Status of Women Employed in the Library of the University of California, Berkeley With Recommendations for Affirmative Action, Berkeley: University of California, Berkeley, Library Affirmative Action Program for Women Committee, 1971. ED 066 163.

7. These ratios are consistent with those obtained by Schiller's (1968) survey of academic librarians, p. 20.

8. It must be noted, however, that SUNY librarians' overall educational level compares favorably to those in Massman's seven state study, as well as librarians studies nationally by Schiller. See Massman, op. cit., p. 482, and Schiller, op. cit., p. 39.

9. This finding cannot be compared easily with other studies. For example, Schiller dealt only with professional degrees, not with subject degrees. Hopson's study did show degrees as a major influence on salaries. See Schiller, op. cit., pp. 88-90, and also Hopson, op. cit. On the other hand, Oppenheimer (1970) states that: "Higher levels of education did not pay off for men or women in 'female occupations'." See:

Valerie Oppenheimer, The Female Labor Force in the United States; Demographic and Economic Factors Governing Its Growth and Changing Composition. Berkeley: University of California, Institute of International Study, 1970. pp. 100-101.

10. In addition to Schiller's national study, studies at Washington State University and California University at Berkeley produced similar results. See:

Anne Lipow, A Report On the Status of Women Employed In The Library of the University of California, Berkeley, With Recommendations for Affirmative Action. Berkeley: California University, Berkeley, Library Affirmitive Action Program for Women Committee, 1971. pp. 15-22. (Also ED 066 163).

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